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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,604	08/24/2006	Andrew Rowser	320529179US1	8963

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EXAMINER	
TRAN, CHUC	
ART UNIT	PAPER NUMBER
2821	

NOTIFICATION DATE	DELIVERY MODE
10/30/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/590,604	ROWSER ET AL.	
	Examiner	Art Unit	
	CHUC D. TRAN	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5,7,11,18 and 23* is/are allowed.

6)☒ Claim(s) *1-4,6,8-10,12-17,19-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 6, 8-10, 14-17 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rowser et al (USP. 6,917,336) in view of Chien (USP. 7,027,005).

Regarding claims 1, 6 and 8, Rowser et al discloses a high gain, broadband, directive, active antenna in Fig. 1-7, comprising: a substantially linear, high-impedance (Abstract), balanced (impedance matching) (Col. 3, Line 22), differential voltage amplifier (Fig. 6, 7) subassembly utilizing passive lossless feedback for gain scalability (Col. 7, Line 18-36), high linearity (Col. 7, Line 6), and elevated input impedance (Col. 6, Line 26); a pair of dipole probe elements (5) (Col. 2, line 60) subassembly connected to the amplifier (Col. 7, Line 33) (Fig. 6) for producing an electric field sensing transduction mechanism (Col. 3, Line 19) and RF spectrum (Col. 3, Line 54), and ground (3) configured to direct received signals onto said pair of dipole probe elements subassembly (5) (Col. 7, line 55). However, Rowser et al is silent on the limitation of a tuned scatter-plate subassembly. Chien disclose an RF broadband antenna device in Fig. 2 comprising a tuned scatter-plate subassembly (reflection plate) (20) (Fig. 2). It would have been obvious to incorporate the teaching of Chien into the teaching of Rowser et al for impedance matching in order to provide higher gain.

Regarding claim 9, Rowser et al discloses a broadband directive reception antenna in Fig.

1-7, comprising: a substantially linear, high-impedance (Abstract), balanced (impedance matching) (Col. 3, Line 22), differential voltage amplifier (Fig. 6, 7) subassembly utilizing passive lossless feedback (Abstract), a dipole probe elements (5) (Col. 2, line 60) subassembly connected to the amplifier (Col. 7, Line 33) (Fig. 6) for producing an electric field sensing transduction mechanism (Col. 3, Line 19), and ground (3) configured to direct received signals onto said pair of dipole probe subassembly (5) (Col. 7, Line 55). However, Rowser et al is silent on the limitation of a tuned scatter-plate subassembly (reflector). Chien disclose an RF broadband antenna device in Fig. 2 comprising a tuned scatter-plate subassembly (reflection plate) (20) (Fig. 2). It would have been obvious to incorporate the teaching of Chien into the teaching of Rowser et al for impedance matching in order to provide higher gain.

Regarding claims 14 and 16, Rowser et al disclose high gain, broadband, directive, active reception antenna in Fig. 1-7, comprising: means (voltage amplifying stage) for amplifying signals received by probing means (5) (Col. 5, Line 17), wherein the amplifying means is substantially linear (DC voltage) (Fig. 6), balanced (impedance matching) (Col. 3, Line 22), and high- impedance (Col. 6, Line 3); means (e-field probe) for probing radio frequency signals (Col. 3, Line 19), wherein the probing means (5) is connected to the amplifying means (4) (Fig. 3, Col. 7, Line 30-36) (Fig. 6), and ground (3) configured to direct the radio frequency signals onto the means for probing radio frequency signals (Col. 7, Line 55). However, Rowser et al is silent on the limitation of means (reflection plate) for creating directivity with separate frequency-dependant, directive modes. Chien disclose an RF broadband antenna device in Fig. 2 comprising means (reflection plate) (20) (Fig. 2) for creating directivity with separate frequency-dependant, directive modes (reflective) See (Chien, Col. 3, Line 37 and 60). It would have been

obvious to incorporate the teaching of Chien into the teaching of Rowser et al for impedance matching in order to provide higher gain.

Regarding claims 2, 15 and 21, Rowser et al disclose that a wire-wound transformer (T) connected to a Field Effect Transistor (FET) (Fig. 6), and wherein the voltage amplifier gain is scaled by the transformer turn-ratio (Col. 6, Line 62).

Regarding claim 4, Rowser et al disclose that the inductance (resistance and capacitance) value of the decoupling inductor is such that an RF voltage peaking effect is obtained at a transistor input (high impedance input) at a desired frequency (Col. 6, Line 3) and (Abstract).

Regarding claims 19-20, Rowser et al disclose an active reception antenna in Fig. 1-7, comprising: a substantially linear, high-impedance (Abstract), balanced (impedance matching) (Col. 3, Line 22), differential voltage amplifier (Fig. 6, 7) subassembly utilizing passive lossless feedback for gain scalability (Col. 7, Line 18-36), a pair of dipole probe elements (5) (Col. 2, line 60) connected to the amplifier (Col. 7, Line 33) (Fig. 6) for producing an electric field sensing transduction mechanism (Col. 3, Line 19) and RF spectrum (Col. 3, Line 54), and ground (3) configured to direct received signals onto said pair of dipole probe elements subassembly (5) (Col. 7, Line 55). However, Rowser et al is silent on the limitation of a bi-directive reception pattern (reflection plate). Chien disclose an RF broadband antenna device in Fig. 2 comprising a bi-directive reception pattern (reflection plate) (20) (Fig. 2). It would have been obvious to incorporate the teaching of Chien into the teaching of Rowser et al for impedance matching in order to provide higher gain.

3. Claims 3, 10, 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rowser et al and Chien as applied to claims above, and further in view of Colman et al (USP. 5,050,236).

Regarding claims 3, 10, 17 and 22, Rowser et al disclose the RF broadband antenna device comprising a bias resistance for reducing noise contribute to the antenna amplifier (Col. 2, Line 50) as set forth in the claims except a bias inductor. Colman et al disclose RF communication device in Fig. 2, comprising a bias inductor (201) (Col. 2, Line 54). It would have been obvious to incorporate the teaching of Colman et al into the teaching of Rowser et al and Chien for tuning the impedance in order to provide the antenna to achieve higher gain.

Allowable Subject Matter

4. Claims 5, 7, 11-13, 18 and 23 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or suggest in combination with the remaining claimed limitation:

(a) a pair of dipole probe elements subassembly connected to the amplifier for producing an electric field sensing transduction mechanism; and a tuned scatter-plate subassembly, wherein the scatter-plate subassembly is tuned such that separate directive modes occur at desired areas of the RF frequency spectrum by distancing of the scatter-plate from driven elements, controlling effective inductance of the scatter-plate, and wherein the scatter-plate effective the inductance is affected by material properties and geometry in claim 5.

(b) a pair of dipole probe elements subassembly connected to the amplifier for producing an electric field sensing transduction mechanism; and a tuned scatter-plate subassembly, wherein

for broadband TV reception, the scatter-plate dimensions and proximity to antenna amplifier and probe elements are chosen such that the antenna exhibits a minimum front to back directive ratio (FIB) of about +8dB at High VHF and UHF frequencies in claim 7.

(c) a dipole probe subassembly connected to the amplifier for producing an electric field sensing transduction mechanism; and at least a tuned scatter-plate subassembly, wherein the scatter-plate subassembly is tuned by distancing of the scatter-plate from driven elements, controlling effective inductance of the scatter-plate, and wherein the scatter-plate effective the inductance is affected by material properties and geometry in claim 11, claims 12-13 are allowed since they are dependent on claim 11.

(d) means for amplifying signals received by probing means, wherein the amplifying means is substantially linear, balanced, and high-impedance; and means for creating directivity with separate frequency-dependant, directive modes, wherein the means for creating directivity is tuned such that separate directive modes occur at desired areas of the RF frequency spectrum by distancing of the means for creating directivity from driven elements, controlling effective inductance of the means for creating directivity, and wherein the means for directivity effective inductance is affected by material properties and geometry in claim 18.

(e) at least two dipole probe elements connected to the amplifier, wherein the combination of the amplifier and the probe elements produce an electric field sensing transduction mechanism, and wherein the active antenna operates with a bi-directive reception pattern, wherein for broadband TV reception, the scatter-plate dimensions and proximity to antenna amplifier and probe elements are chosen such that the antenna exhibits a minimum front

to back directive ratio (F/B) of about +8dB at High VHF and UHF frequencies and to achieve similar directive properties at lower frequencies in claim 23.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUC D. TRAN whose telephone number is (571)272-1829. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chuc D Tran/
Examiner, Art Unit 2821

/Douglas W Owens/
Supervisory Patent Examiner, Art Unit 2821
October 26, 2009